

CHAPTER 1

INTRODUCTION

Army pathfinders mainly provide navigational aid and advisory services to military aircraft in areas designated by supported unit commanders. The pathfinders' secondary missions include providing advice and limited aid to units planning air assault or airdrop operations.

1-1. EMPLOYMENT

The pathfinders provide navigational aid and air traffic advisories for Army aircraft. This occurs at any phase of an air assault or ground operation that requires sustained support by Army aircraft. The commander employs pathfinders on a short-term basis for some missions. He can redeploy the pathfinders after they complete a major troop lift or airdrop.

a. **Primary.** Ideally, the commander assigns a pathfinder team to each combat aviation battalion. This enhances the relationship between aviators and pathfinders, who have to work well together and understand each other in order to successfully complete a mission. Aviators and pathfinders must maintain a good working relationship, despite the reduction of pathfinder units and the assignment of pathfinder-coded positions to ground units.

(1) Many units might have no trained pathfinder assets. In this case, higher headquarters must temporarily assign pathfinder assets from an external source to train supported unit personnel and oversee the conduct of pathfinder operations.

(2) Non-pathfinder-qualified soldiers receive training from the pathfinders and form into a company-level pathfinder team. Once trained, the team provides navigational aid, air traffic advisories, and any other relevant information. Around the clock, the pathfinder team supports any type of air movement or resupply operation conducted by or for the ground unit and supported by an aviation unit.

(3) Trained, equipped pathfinders select, mark, improve, and control landing sites. Engineers in direct support (DS) of lifted ground units may help pathfinders improve landing zones (LZs). In most situations, pathfinders perform two or more of these jobs at the same time. In each case, they start out by setting up ground-to-air radio communications. Also, combat lifesaver-qualified pathfinders supplement internal medical support.

b. **Secondary.** When not performing duties for supported units, pathfinders remain with their equipment, near and in communication with the supported ground unit CP. While pathfinders await further missions, the parent or supported CP may task them to help control the aviation unit base airfield, to perform minor demolition work, or, in staff sections, to perform map and aerial photographic work. However, before the pathfinders perform secondary missions, they must first train and perform routine maintenance on their equipment.

1-2. CAPABILITIES

Appropriately equipped and trained pathfinders--

- a. Reconnoiter areas selected by supported unit commanders.
- b. Select LZs and drop zones (DZs).

- c. Infiltrate areas of operation by foot, vehicle, watercraft, or air.
- d. Rappel or parachute from aircraft.
- e. Prepare LZs and DZs.
- f. Establish and operate visual and electronic navigation aids.
- g. Remove minor obstacles.
- h. Use ground-to-air (GTA) radio communications to guide pilots and advise them of air traffic within the area of operations (AO).
- i. Coordinate directly with fire support units and keep pilots informed about friendly mortar and artillery fires.
- j. Provide technical assistance in assembling supplies, equipment, and troops before loading the aircraft for deployment to LZs and DZs.
- k. Advise and provide limited physical assistance in preparing and positioning supplies, equipment, and troops for air movement.
- l. Conduct limited NBC monitoring and surveying of designated areas.
- m. Provide limited weather observations, to include wind velocity and direction, cloud cover, visibility, and approximate cloud ceiling.
- n. In the absence of special tactics team (STT), by agreement with the USAF, operate DZs and airfields for USAF aircraft.
- o. Survey DZs for use by USAF and Army aircraft. In this situation, pathfinders might require USAF-compatible UHF or VHF radios. Aviators and pathfinders coordinate to make sure everyone knows the ground markings and radio procedures.

1-3. LIMITATIONS

When they guide aircraft or perform other, related primary tasks such as the following, pathfinders require augmentation:

- Provide security.
- Remove major obstacles.
- Recover and assemble equipment and supplies.
- Operate additional radio nets and telephones.
- Transport equipment.
- Conduct detailed NBC monitoring and surveying.

1-4. EQUIPMENT

Pathfinders use a variety of equipment. Though the aviation unit SOP may specify the type of equipment pathfinders will use, the mission dictates what specific items of equipment the pathfinders will take on the operation.

a. **Navigation Aids.** Pathfinders use navigation aids to help aviators find and identify an exact area.

(1) **Electronic Navigation Aids.** With these aids, pathfinders can signal farther than they can with visual navigation aids:

- Homing beacons.
- Transponders.
- Radios.
- Any other electronic devices that can aid in aircraft navigation.

(2) **Visual Navigation Aids.** With these aids, pathfinders can designate specific areas or points on LZs and DZs. They use them as GTA signals. Unfortunately, visual aids are visible, so the enemy can also see them.

- (a) *Day.*
 - Panels.
 - Smoke.
 - Signal mirrors.
 - Colored gloves for signalmen.

- (b) *Night.*
 - Light beacons.
 - Lanterns.
 - Baton flashlights.
 - Strobe lights.
 - Pyrotechnics.

(c) *Day or Night.* Pathfinders can make field-expedient visual aids for day or night.

(3) ***Infrared Navigation Aids.*** At night, pathfinders can use any infrared navigation aids that are compatible with their NVG.

b. **Communications.** Pathfinders use FM radios with secure capability and limited wire equipment. These radios allow pathfinders to communicate with aircraft, other pathfinder elements, and supported units. Incorporated homing capabilities in these radios allow pathfinders to provide navigational aid to aircraft.

c. **Assembly Aids.** Pathfinders use assembly aids to designate troop and supply assembly areas. Assembly aids include both electronic and visual devices. The pathfinders can also use or make field-expedient devices to aid in assembly. Because assembly aids can attract the enemy's attention, pathfinders must carefully avoid compromise.

(1) ***Electronic Assembly Aids.*** These include radios and homing devices that work by radio signal. Enemy direction-finding equipment detects electronic signals.

(2) ***Visual Assembly Aids.*** These simple-to-use aids allow positive identification of assembly areas. The enemy can also see them. To ensure understanding, pathfinders must closely coordinate the use of visual assembly aids. (See TM 9-1370-206-10, FM 21-60, and STANAGs 3117 and 3281.) Visual assembly aids include--

- (a) *Day.*
 - Panels.
 - Smoke.
 - Armbands.
- (b) *Night.*
 - Lanterns.
 - Flashlights.
 - Light beacons.
 - Strobe lights.
 - Chemiluminescent lights.
 - Pyrotechnics.

(3) ***Infrared Assembly Aids.*** Pathfinders can use infrared light sources as assembly aids, but, if they do so, both the pathfinders and the pilots must use NVDs.

- d. **Miscellaneous.** Pathfinder equipment also includes--
 - Vehicles.
 - Binoculars.
 - Night vision devices.

- Nonelectric demolition kits.
- Wind-measurement equipment.
- Parachutes.
- NBC-detection equipment.
- Thermal sights.

1-5. COMMUNICATIONS SECURITY

Pathfinders and terminal guidance personnel must know about any hostile data collection and exploitation activities. Such activities seek to disrupt, deceive, harass, or otherwise interfere with the command and control of pathfinder operations.

a. **Enemy Interception.** The enemy can intercept, analyze, determine the direction of, and exploit electromagnetic energy radiating from any signal equipment such as radios, radar, and more. He uses this intelligence for fire and maneuver and for electronic countermeasures.

(1) The enemy may collect pathfinder emissions data for immediate or later use. He may use jamming or deception, or he may continue to monitor and analyze the data for later use.

(2) Time-distance factors limit the enemy's ability to exploit signal intelligence in support of his ground operations. He may use a reaction force, or he may find the source of the signal using a direction finder. If he uses DF equipment, he may also use ECM to jam and deceive the pathfinder's electronic aids.

b. **Pathfinder Awareness.** Pathfinders must plan for the enemy's DF capabilities. Automated DF systems determine line bearings for each signal detected. The enemy continuously processes and compares line bearings and plots fixes for pathfinder signals. Depending on the size of the DF base and the number of DF systems available, the enemy may accurately locate a friendly position with little difficulty.

(1) What the enemy does to gain SIGINT reveals his intent. In combating enemy DF systems, pathfinders consider the following:

- The high priority of aviation-related missions.
- The length of time the pathfinders remain on the air.
- The number of pathfinder transmitters.
- The distance of friendly forces from--
 - Enemy DF systems.
 - Enemy fire and maneuver elements.
 - Enemy collection and jamming resources.
- Friendly actions to mask pathfinder operations.

(2) Strict signal security practices, to include EW, greatly reduce the vulnerability of signal devices to enemy exploitation. (FM 24-18 and FM 34-40 provide more information on communications.)

1-6. TRAINING

Personnel qualify as pathfinders only by completing the pathfinder Course at the US Army Infantry School, Fort Benning, Georgia.

a. **Goals.** The pathfinder training program stresses--

- (1) The development of individual proficiency in air traffic control procedures.
- (2) That pathfinders learn and know the SOP of the aviation unit they support.

- (3) Mission accomplishment in an EW environment.
 - b. **Commander's Responsibilities.** Major unit commanders who use pathfinders bear the responsibility for sustaining the pathfinders' training and proficiency. Pathfinder training works best when integrated with the training of supported aviation and ground units.
 - c. **Pathfinder's Responsibilities.** The assigned, qualified, and trained pathfinder must ensure that any nonqualified soldiers assigned to his unit team receive adequate pathfinder training before going on a mission.